

GENERAL  
HEALTH

CONDITIONING

# YOUR NUTRITION GAME PLAN

TRAINING

FINE  
TUNING

## Answers to Your Top Questions About Creatine

### 1. WHAT IS CREATINE?

#### IN THE BODY:

Creatine is a protein-like compound made by the liver, kidney and pancreas from the amino acids glycine, ornithine, and methionine, and is primarily stored in muscle cells.

#### AS A SUPPLEMENT:

Creatine is sold as a powder, capsule, tablets, effervescent powder, chewing gum, candy, bar or drink mix.

### 2. WHAT DOES CREATINE DO?

Muscles use creatine, in the form of phosphocreatine, to generate energy during intense exercise and recover faster between repeated bouts of exercise.

### 3. WHAT IS THE THEORY BEHIND CREATINE SUPPLEMENTATION?

Creatine supplementation can increase creatine in your muscles. Researchers aren't sure how supplemental creatine works. One theory is that increased creatine lets your muscles work harder and recover faster. Higher than normal levels of creatine also appear to stimulate muscle growth.

### 4. WHEN WAS THIS COMPOUND DISCOVERED?

Creatine is not new. Scientists have known about creatine for decades, and athletes have ingested creatine since the days of the Gladiators. However, before consuming it in powder form, it was consumed in the form of meat. A pound of raw meat has about 2 grams of creatine and a pound of raw fish has up to 5 grams. Therefore, athletes who eat large amounts of meat, poultry and fish are ingesting more creatine than athletes who limit meat. Strict vegetarians will have the lowest intake.

### 5. WILL TAKING A CREATINE SUPPLEMENT MAKE ME STRONGER AND FASTER?

Studies on young adult males and females show creatine supplementation can improve high-intensity, repetitive performance in activities like rowing, sprinting, cycling, swimming and weight lifting (bench press, jump squats). Not all studies show improvement. In fact, creatine supplementation caused a decline in the performance of



wrestlers during rapid weight loss. Also, creatine supplementation has not been shown to help athletes improve in endurance events like distance running.

### 6. WILL TAKING CREATINE INCREASE MY BODY WEIGHT?

The average weight gain reported in research on adults is 1.5-3.5 pounds in the first week of loading with creatine. Part of the rapid weight gain may be due to additional water that creatine holds in the muscle cells. Athletes on creatine for a longer period of time (up to 3 months) have been shown to gain 2 to 6-1/2 pounds more lean mass than athletes who are training without creatine. Increases in body weight following supplementation are lower in women compared to men.

### 7. HOW MUCH CREATINE IS NEEDED?

The ideal dose and timing of creatine supplementation is a question being researched. But one thing is clear. Supplementing cannot increase the muscle's natural limit, so there comes a point where more is not better. Excess creatine is excreted in urine.

Doses commonly used in research are 20-30 grams per day, split into four or five doses, for about two days. After this "loading phase" muscle creatine can be maintained with about 2-3 grams of creatine/day. Creatine levels remain elevated for several weeks after supplementation stops, but return to normal in about 4 weeks.

Research suggests that optimal uptake into the muscle is supported by ingesting creatine with carbohydrate (such as a sport drink) and taking it soon before or after strenuous exercise.

### 8. WILL CREATINE SUPPLEMENTS HELP ALL ATHLETES?

Creatine supplementation will not help all athletes. Athletes who are most likely to benefit are those who are training to gain sprint speed, strength and mass, have nutritionally adequate diets and who have naturally lower levels of creatine.

### 9. ARE THERE RISKS TO TAKING CREATINE?

No negative side effects have been reported in research on college-age subjects with no medical conditions who are given doses of up to 25 grams per day for up to one year. The risks of taking high doses of creatine are unknown. Little research has been conducted on creatine supplementation in youth younger than 18, so its safety and effectiveness are unknown.



This information is not intended to take the place of medical advice, nor is it meant to encourage or discourage creatine use. Creatine supplementation will never replace natural ability, an adequate diet and a rigorous training program.